CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8) Applicant(s): **Harrington et al.**				Docket No. **31433-44**
Application No. **10/673,816**	Filing Date **September 29, 2003**	Examiner **Wilkins**	Customer No. **000046591**	Group Art Unit **1742**

Invention: **CAPACITOR CONTAINING ALUMINUM ANODE FOIL ANODIZED IN LOW WATER CONTENT GLYCERINE-PHOSPHATE ELECTROLYTE**

I hereby certify that this **Joseph T. Guy, Ph.D.**
(Identify type of correspondence)

is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on **August 13, 2007**
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Attorney Reference: 31433-44

In re Application of: Harrington et al.		Art Unit: 1742
Serial No.:	10/673,816	Examiner: Wilkins
Filed:	9/29/2003	Appeal No.: TBD
Entitled: CAPACITOR CONTAINING ALUMINUM ANODE FOIL ANODIZED IN LOW WATER CONTENT GLYCERINE-PHOSPHATE ELECTROLYTE		Conf. No.: 2218

COPY

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is in response to the Examiners Answer mailed June 12, 2007. This response is being filed within two months of the mailing date of the Examiners Answer.

No fees are due. To the extent that a fee is due the Commissioner is authorized to charge any fee required for filing this brief to Account Number 08-0719.

This brief is intended to supplement the Appeal Brief mailed March 19, 2007 and all comments entered therein are incorporated herein by reference. This supplemental brief

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No fees are due. To the extent that a fee is due the Commissioner is authorized to charge any fee required for filing this brief to Account Number 08-0719.

This brief is intended to supplement the Appeal Brief mailed March 19, 2007 and all comments entered therein are incorporated herein by reference. This supplemental brief

points out critical errors in the Examiners Answer and points out incorrect statements of fact set forth therein.

Applicants respectfully request that the brief be acknowledged and entered or, alternatively, that the final rejection be withdrawn.

REAL PARTY IN INTEREST

This application is assigned to Kemet Electronics Corporation who is the real party in interest.

RELATED APPEALS AND INTERFERENCES

No related appeals and no relevant interferences are known to the appellant.

STATUS OF CLAIMS

Claims 1-15 and 19-32 are present as originally filed on September 29, 2003.

The rejection of claims 1-15 and 19-32 is appealed.

STATUS OF AMENDMENTS

There are no outstanding amendments.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The invention is related to a process for preparing a capacitor. In general, a capacitor is prepared by forming an oxide coating on aluminum. The aluminum functions as the anode of the capacitor and the oxide functions as the dielectric. The present invention is focused on the manner in which the oxide is formed on the aluminum.

The claimed subject matter includes an initial step of pre-hydrating the aluminum. The pre-hydrated aluminum is then placed in an anodizing solution comprising glycerine, about 0.1 to about 2.0%, by weight, water and about 0.01 to about 0.5 wt% orthophosphate. In one embodiment a voltage is applied to the aluminum plate which is excess of 220 volts. In another embodiment the voltage is applied sequentially wherein an applied voltage is maintained until the current decreases by 50% of the initial current after which the current is increased. The voltage is increased sequentially until the final voltage is achieved.

MAPPING OF INDEPENDENT CLAIMS TO SPECIFICATION

Claims 1 and 19 are the only independent claims. The subject matter of each independent claim is mapped to the specification as follows:

Claim 1. A process for preparing a capacitor comprising:

fabricating an aluminum plate (*paragraph [00021] line 2*);

pre-hydrating said aluminium plate(*paragraph [00032] line 2*);

contacting said plate with an anodizing solution comprising glycerine (*paragraph [00027] line 3*), about 0.1 to about 2.0%, by weight, water (*paragraph [00027] line 5*) and about 0.01 to about 0.5%, by weight, orthophosphate (*paragraph [00027] line 4*);

applying a voltage to said aluminum plate of at least about 220 volts (*paragraph [00017] line 2*).

Claim 19. A process for preparing a capacitor comprising:

fabricating an aluminum plate (*paragraph [00021] line 2*);

pre-hydrating said aluminium plate (*paragraph [00032] line 2*);

contacting said plate with an anodizing solution comprising glycerine(*paragraph [00027] line 3*), about 0.1 to about 2.0%, by weight, water (*paragraph [00027] line*

5) and about 0.01 to about 0.5%, by weight, orthophosphate (*paragraph [00027] line 4*);

applying a voltage to said aluminum plate and determining an initial current (*paragraph [00031] lines 1-2 and paragraph [00030] lines 1-2*);

maintaining said first voltage until a first measured current is no more than 50% of said initial current (*paragraph [00031] line 4*);

increasing said voltage and redetermining said initial current (*paragraph [00031] lines 1-2*);

maintaining said increased voltage until a second measured current is no more than about 50% of said redetermined initial current (*paragraph [00031] line 4*), and

continuing said increasing said voltage and said maintaining said increased voltage until a final voltage is achieved (*paragraph [00030] lines 1-3*).

GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

Appellant seeks review of the rejection of claims 1-15 and 19-32 under 35 U.S.C. 103(a) as being unpatentable over Kinard et al. (USP 5,837,121) in view of Ball et al. (USP 4,481,083).

ARGUMENTS

Claims 1-15 and 19-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinard et al. (USP 5,837,121) in view of Ball et al. (USP 4,481,083).

All arguments presented in the Appeal Brief mailed March 19, 2007 are incorporated by reference.

With regards to the Examiners Answer, Applicants have noticed certain errors and incorrect statements which are addressed herein.

On Page 3, third paragraph, the Examiner has neglected to state that which Appellant has apparently failed to show. Neither the Board nor the Appellant can adequately interpret the position of the Examiner with regards to this apparent failed showing.

On Page 4, second full paragraph, the Examiner has stated:

> "Therefore, it would have been obvious to one of ordinary skill in the art to have increased the applied voltage to have increased the thickness of formed anodized oxide layer and/or the rate of oxide layer formation so that the formed capacitor could have been made to have a higher operating voltage and/or created more quickly."

Appellant respectfully submits that the Examiner is incorrect in this statement for several reasons.

With limited growth anodization the thickness of the anodized layer is related to voltage. As the voltage increases the thickness increases. The rate of oxide layer formation is a function of current density. Therefore, increasing the voltage would not necessarily increase the rate of oxide growth unless the current density is also increased.

With the non-thickness limited anodization of Kinard et al. the thickness is controlled by time with longer times related to thicker oxide coating. The rate of the oxide layer is not controlled by voltage as stated by the Examiner.

On Page 6, first paragraph, and Page 8 of the Examiners Answer "freshly prepared" glycerine solution is stated to have about 3000 ppm of water. Applicants agree that this statement is made in Kinard et al. The Examiner has taken this statement out of context. Example 4 utilizes the "freshly prepared" glycerine and the initial result is loss of current with time. This problem is traversed in Example 5 wherein a "heat-treated electrolyte" was employed. In this instance the current is relatively stable and the oxide thickness is a function of time at voltage.

On Page 8, last paragraph, the Examiner states that Kinard et al. teach at col. 5, lines 24-26 that in non-limiting

thickness anodization the applied voltage is proportional to the rate of oxide film formation. This is not what is stated in Kinard et al. What is actually stated is that the rate of oxide film formation is dependent on applied voltage. As stated above it is not the applied voltage but the current density of the applied voltage that controls the rate of oxide growth or time at voltage.

On Page 9, the Examiner states that for increased thickness of oxide film the operating capacitance goes up. This is incorrect. Operating capacitance goes down as oxide thickness goes up. Therefore, oxide film thickness is not a result effective variable as assumed by the Examiner.

Further on Page 9, the Examiner states that the rate of oxide film growth is directly controlled by the applied voltage. As stated above, this is not correct. The rate of oxide growth is a function of current density or time not voltage.

CONCLUSION

The rejection of all claims has been traversed. Appellants request that all claims be passed to issuance in an expeditious manner.

Respectfully submitted,

August 13, 2007

Joseph T. Guy, Ph.D.
Customer No.: 46591

CLAIMS APPENDIX

1.(original) A process for preparing a capacitor comprising:

fabricating an aluminum plate;

pre-hydrating said aluminium plate;

contacting said plate with an anodizing solution comprising glycerine, about 0.1 to about 2.0%, by weight, water and about 0.01 to about 0.5%, by weight, orthophosphate;

applying a voltage to said aluminum plate of at least about 220 volts.

2.(original) The process for preparing a capacitor of claim 1 further comprising the step of:

etching said aluminum plate prior to said pre-hydrating of said aluminum plate.

3.(original) The process for preparing a capacitor of claim 1 wherein said voltage is applied in increasing increments with an age time between each said increment.

4.(original) The process for preparing a capacitor of claim 3 wherein said increments are less than about 75 volts.

5.(original) The process for preparing a capacitor of claim 4 wherein said increments are at least about 20 V to no more than about 50 V.

6.(original) The process for preparing a capacitor of claim 5 wherein said age time is sufficient for the current to decrease to from about 1 to about 50% of an initial current.

7.(original) The process for preparing a capacitor of claim 6 wherein said age time is sufficient for the current to decrease to from about 10 to about 30% of said initial current.

8.(original) The process for preparing a capacitor of claim 7 wherein said age time is sufficient for the current to decrease to about 20% of said initial current.

9.(original) The process for preparing a capacitor of claim 1 wherein said anodizing solution is at a temperature of about 25°C to about 125°C.

10.(original) The process for preparing a capacitor of claim 9 wherein said anodizing solution is at a temperature of about 80°C to about 105°C.

11.(original) The process for forming a capacitor of claim 1 wherein said anodizing solution comprises about 0.01 to about 0.1%, by weight, soluble orthophosphate.

12.(original) The process for forming a capacitor of claim 1 wherein said soluble orthophosphate is selected from a group consisting of ammonium phosphate, alkali metal phosphate, amine phosphate or mixtures thereof.

13.(original) The process for forming a capacitor of claim 1 wherein said soluble orthophosphate is selected from a group consisting of mono-sodium phosphate, di-potassium phosphate, and sodium potassium phosphate.

14.(original) The process for forming a capacitor of claim 1 wherein said soluble orthophosphate is selected from a group consisting of mono-ammonium phosphate and di-ammonium phosphate.

15.(original) The process for forming a capacitor of claim 1 wherein said anodising solution comprises about 0.1 to about 1%, by weight, water.

16-18.(cancelled)

19.(original) A process for preparing a capacitor comprising:

fabricating an aluminum plate;

pre-hydrating said aluminium plate;

contacting said plate with an anodizing solution comprising glycerine, about 0.1 to about 2.0%, by weight, water and about 0.01 to about 0.5%, by weight, orthophosphate;

applying a voltage to said aluminum plate and determining an initial current;

maintaining said first voltage until a first measured current is no more than 50% of said initial current;

increasing said voltage and redetermining said initial current;

maintaining said increased voltage until a second measured current is no more than about 50% of said redetermined initial current, and

continuing said increasing said voltage and said maintaining said increased voltage until a final voltage is achieved.

20. (original) The process for preparing a capacitor of claim 19 further comprising the step of:

etching said aluminum plate prior to said pre-hydrating of said aluminum plate.

21. (original) The process for preparing a capacitor of claim 19 wherein said final voltage is above 220 volts.

22. (original) The process for preparing a capacitor of claim 19 wherein said voltage is increased by no more than about 75 volts.

23. (original) The process for preparing a capacitor of claim 22 wherein said voltage is increased by at least about 20 V to no more than about 50 V.

24. (original) The process for preparing a capacitor of claim 23 wherein said first measured current or said second measured current is from about 1 to about 50% of said initial current.

25.(original) The process for preparing a capacitor of claim 24 wherein said first measured current or said second measured current is from about 10 to about 30% of said initial current.

26.(original) The process for preparing a capacitor of claim 25 wherein said first measured current or said second measured current is about 20% of said initial current.

27.(original) The process for preparing a capacitor of claim 19 wherein said anodizing solution is at a temperature of about 25°C to about 125°C.

28.(original) The process for preparing a capacitor of claim 27 wherein said anodizing solution is at a temperature of about 80°C to about 105°C.

29.(original) The process for forming a capacitor of claim 19 wherein said anodizing solution comprises about 0.01 to about 0.1%, by weight, soluble orthophosphate.

30.(original) The process for forming a capacitor of claim 19 wherein said soluble orthophosphate is selected from a group consisting of ammonium phosphate, alkali metal phosphate, amine phosphate and mixtures thereof.

31.(original) The process for forming a capacitor of claim 19 wherein said soluble orthophosphate is selected from a group consisting of mono-sodium phosphate, di-potassium phosphate, and sodium potassium phosphate.

32.(original) The process for forming a capacitor of claim 19 wherein said soluble orthophosphate is selected from a group consisting of mono-ammonium phosphate and di-ammonium phosphate.

33-36.(cancelled)

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None